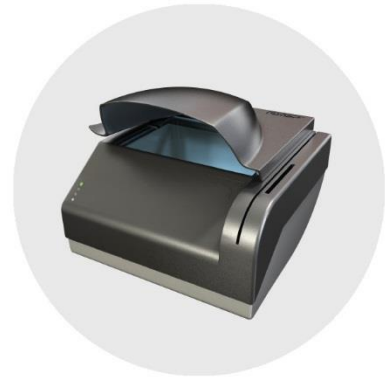


# PASSPORT READER



## INSTALL GUIDE

# Passport Reader Install Guide

v. 2.1.6 or later

Document version: 2019-12-04

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### **Declaration of RoHS Compliance for Electrical and Electronic Products:**

ARH Inc. ("the Company") hereby declares that the Passport Readers placed on the European Community market by the Company after 1st July 2006 are compliant with EC Directive 2002/95/EC on the Restrict of Certain Hazardous Substances in Electrical and Electronic Equipment (commonly known as the EU RoHS Directive.)

Compliance with RoHS means that where the product falls under the scope of the EU RoHS Directive, the product does not contain the following substances:

- Mercury (Hg) 0.1%
- Lead (Pb) 0.1%
- Cadmium (Cd) 0.01%
- Hexavalent Chromium (Cr+6) 0.1%
- Polybrominated Biphenyls (PBB) 0.1%
- Polybrominated Diphenyl Ethers (PBDE) 0.1%

above the indicated maximum concentration values by weight in homogeneous materials unless the substance is subject to an exemption specified in the Directive or in subsequent Commission Decisions.

This declaration represents the Company's best knowledge, which is partially based on information provided by third party suppliers.

### **Equipment modifications:**

This equipment must be installed and used according with the instructions given in its documentation. This equipment contains no serviceable components. Unauthorized equipment changes or modifications cause warranty to void.

## PRODUCT OVERVIEW

### Note

The devices listed here are base models which are available in various configuration setups.

### 1. COMBO SERIES:

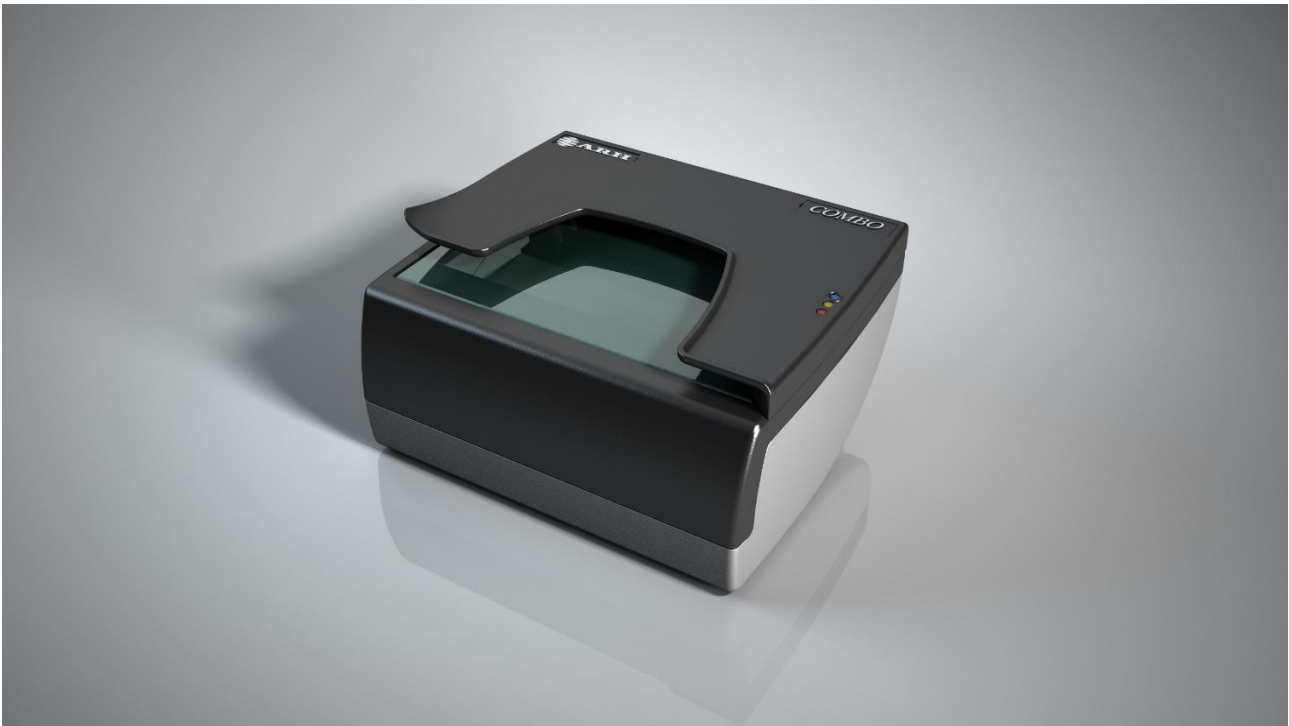
#### 1.1.1. Desktop devices

##### 1. Combo Smart ePassport Reader device



---

## 2. Combo Scan



1.1.2. Kiosk devices:

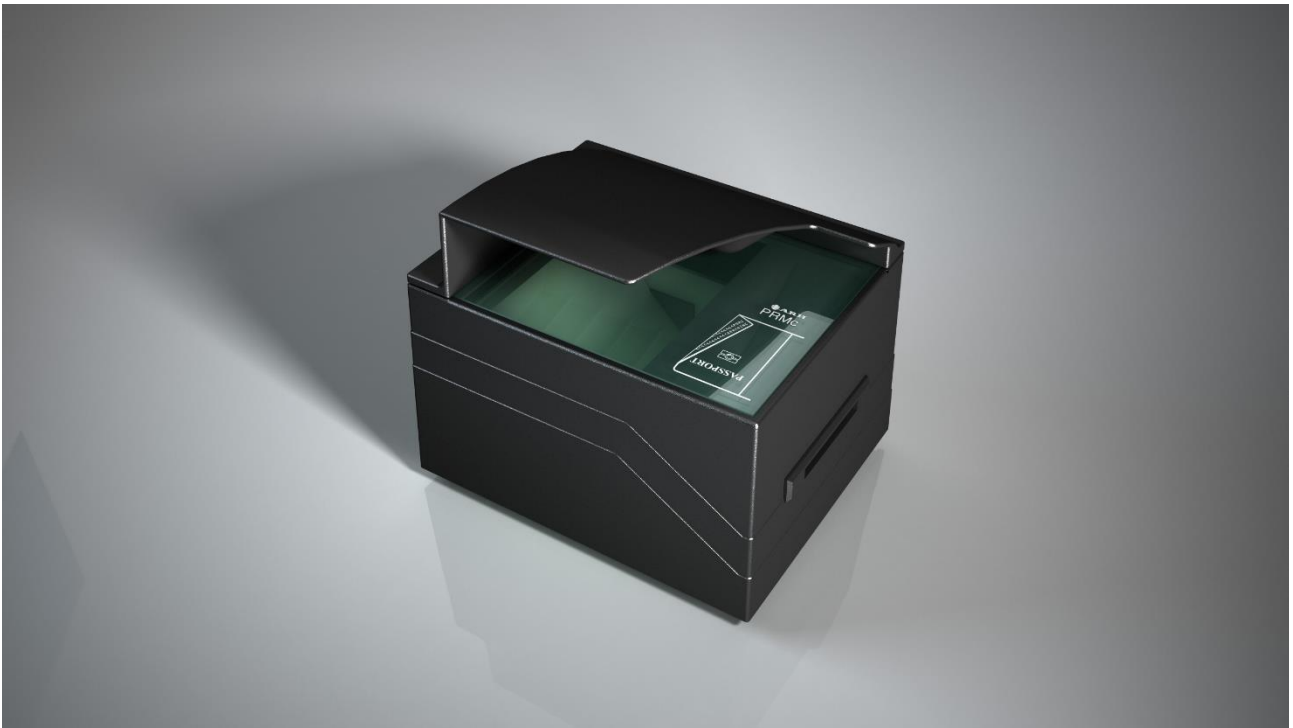
1. Combo Smart Kiosk ePassport Reader device



2. Combo Scan Kiosk device



## 2. PRMC E-PASSPORT READER DEVICE



## 3. AFS 510 FINGERPRINT SCANNER DEVICE





## 4. PACKAGE CONTENTS

- Passport Reader Device
- Power Supply (if applicable, please see the table below)
- USB 2.0 Hi-speed cable
- Glass cleaning wipe (1 pc)

DEVICE	COMBO SMART, KIOSK SMART, PRMC	AFS 510 <sup>*</sup>	COMBO SCAN,KIOSK SCAN	COMBO SMART USB <sup>**</sup>
POWER SUPPLY	SUN-1200500 Switching Power Adaptor <ul style="list-style-type: none"> <li>• Input: 100 - 240V ~ 50/60 Hz</li> <li>• Input Current: Max. 1.7A</li> <li>• Output: 12V – 5.0A</li> <li>• Output Power Max: 60W</li> </ul>	GM-050200 Switching Power Adaptor <ul style="list-style-type: none"> <li>• Input: 100 - 240V ~ 50/60 Hz</li> <li>• Input Current: 0.50A</li> <li>• Output: 5V – 2.0A</li> <li>• Output Power: 10W</li> </ul>	USB powered	CGSW-0506000 <ul style="list-style-type: none"> <li>• Input: 100 - 240V ~ 50/60 HZ</li> <li>• Input Current: 1.5A</li> <li>• Output: 5V – 6A</li> <li>• Output Power Max: 30W</li> </ul>

<sup>\*</sup>The AFS510 can be powered with the supplied USB Y cable as well.

<sup>\*\*</sup>The power supply for the Combo Smart USB is optional.

### ! Important

Only operate the device with the power supply it was shipped with.

## 5. SYSTEM REQUIREMENTS

Recommended minimum system requirements:

- Intel Pentium 2 GHz CPU or higher (or equivalent x86 compatible CPU),
- 1 GB RAM or more (depending on application),
- 32 or 64-bit Microsoft Windows7/8.1/10/Vista operating system or Linux operating system (kernel version 3.2),
- Integrated USB 2.0 port (on motherboard).

### Note

The speed of image processing highly depends on the type of hardware used. In general, the shorter recognition time is needed, the more powerful machine you are advised to use.

## HARDWARE INSTALLATION

Please follow the steps below to connect your PR device to the PC.

1. Connect the PR device to one of the USB 2.0 or 3.0 ports of your PC with the supplied USB cable.
2. Connect the power supply\* to the device.  
\* Only applicable to the devices shipped with a power supply.
3. If the device is equipped with a power button, switch it on. Models that do not have power buttons will power on automatically once power is supplied.

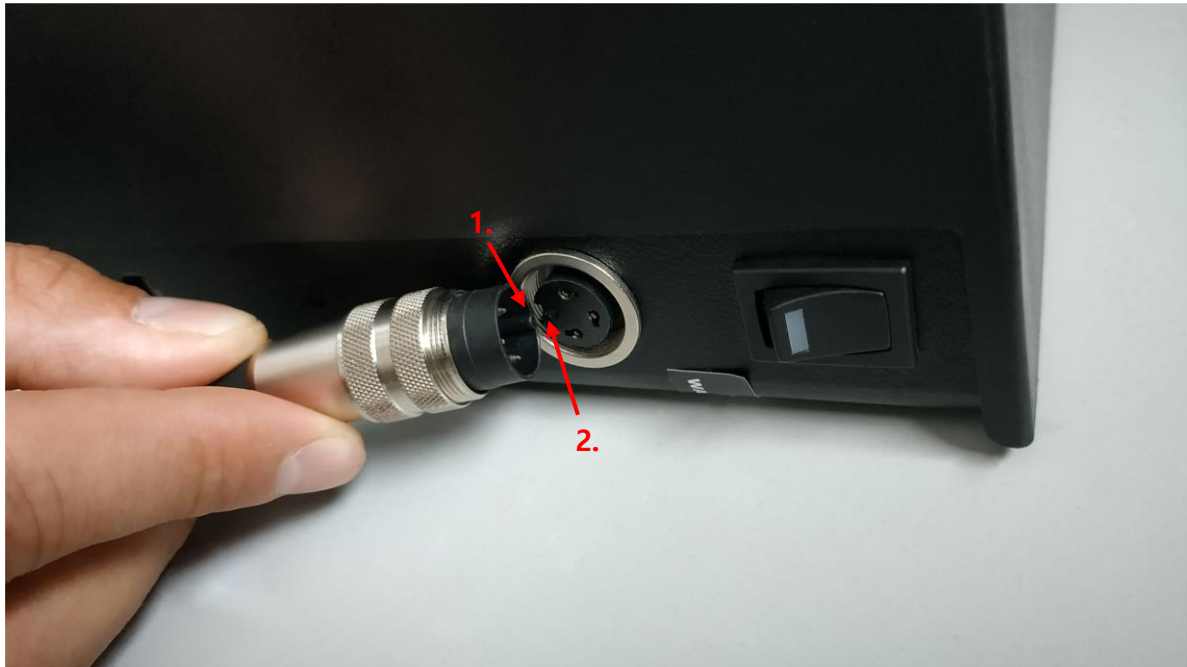
### Note

It is strongly recommended to use the USB ports found on the motherboard of your computer. When connecting the USB cable to a front panel USB port, make sure that the cable connecting the front panel and the motherboard is shielded.

If the device is used with a laptop, please make sure that the output voltage of the USB ports is not less than 5V. For this reason, it is highly recommended that you use the laptop on AC power (with the power cord connected).

**! Important**

When you connect the power supply to the device, keep in mind to fit the small bump (1.) into the matching socket (2.).



After connecting the power supply to the device, please screw on the plug to avoid accidental unplugging.



**! Important**

To unplug the device (Combo Smart), firmly grasp the plug, not the cord, and pull it to disconnect as shown below:



Step 1



Step 2

It is highly recommended to not pull the cord according to the image below, in order to not tear the cable:



Do not operate the unit if it has a damaged cord or plug.

# SOFTWARE INSTALLATION

## 1. THE PASSPORT READER SOFTWARE PACKAGE

### ! Important

The Passport Reader software package is available for download from our technical support website. Please register at [atssregistration.arh.hu](https://atssregistration.arh.hu) and submit a ticket for any ARH software requests.

The Passport Reader Software Package includes the following:

- Drivers for Passport Reader devices and AFS510 Fingerprint Scanner devices.
- Software Development Kit for C/C++, Visual Basic, Delphi, C#, VB.NET and Java programming languages:
  - Interface files
  - Sample programs
  - Manual in HTML and CHM format
- Full Page Reader Application
- Authentication Checker Application
- Passport Reader utility programs

## 2. INSTALLATION ON WINDOWS OPERATING SYSTEMS

### ! Important

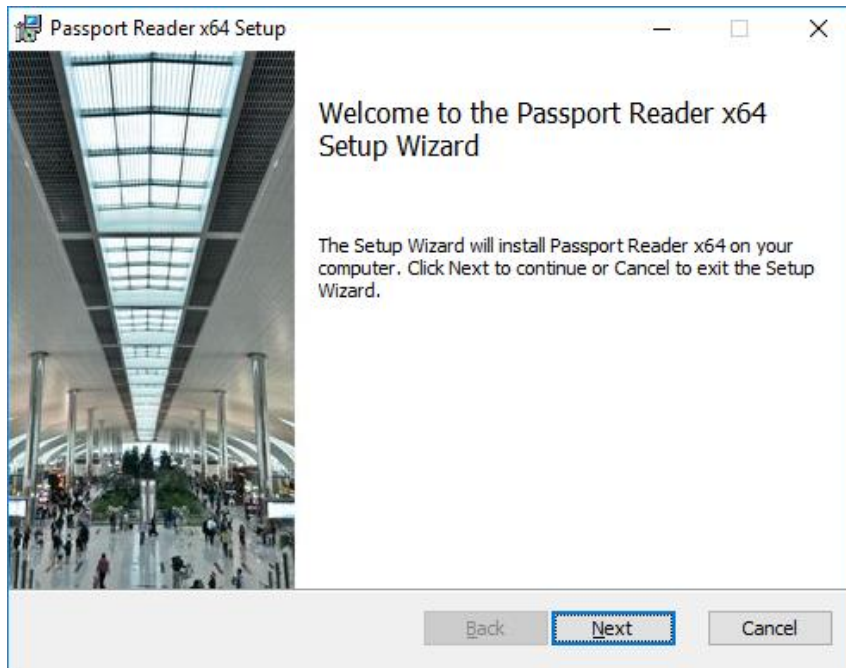
Administrator rights are needed for installation.

### ! Important

Upon installation of the 32-bit version to a 64-bit PC, the 64-bit device drivers are installed automatically. For 32-bit application development on 64-bit PCs, install the 32-bit version of the Passport Reader software as well.

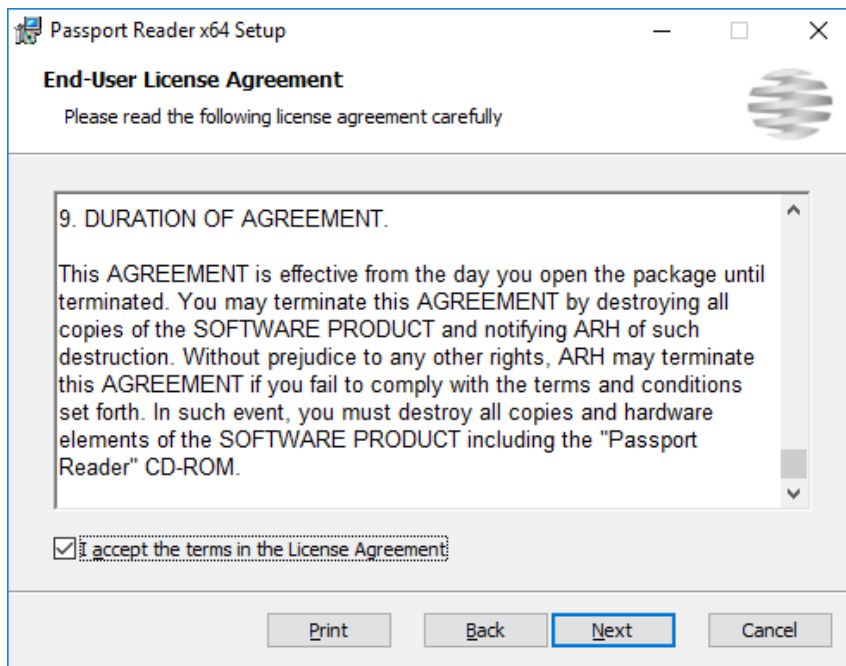
- Before installing the Passport Reader software, all previous versions of the software have to be uninstalled from the system. This process differs depending on the version that is currently installed on the system.
  - For versions 2.1.5-26W or earlier, go to **Start Menu / Programs / GX / UNINSTALL** and run – **FULL UNINSTALL** – as well as **Start menu / Programs / GX / 32 bit version / – FULL UNINSTALL** – if applicable.
  - For versions 2.1.6 or later, go to **Control Panel / Add/Remove Programs** and remove all versions of the Passport Reader software.
- Once all previous versions of the software have been uninstalled, restart the computer.

- Next, locate the downloaded software package and run **pr-2.1.x-x86.msi** (in case of 32-bit operating systems) or **pr-2.1.x-x64.msi** (in case of 64-bit operating systems). These files are located within the **win** folder of the Passport Reader package.
- The installation starts with the following window:



Welcome Page of Passport Reader x64 setup

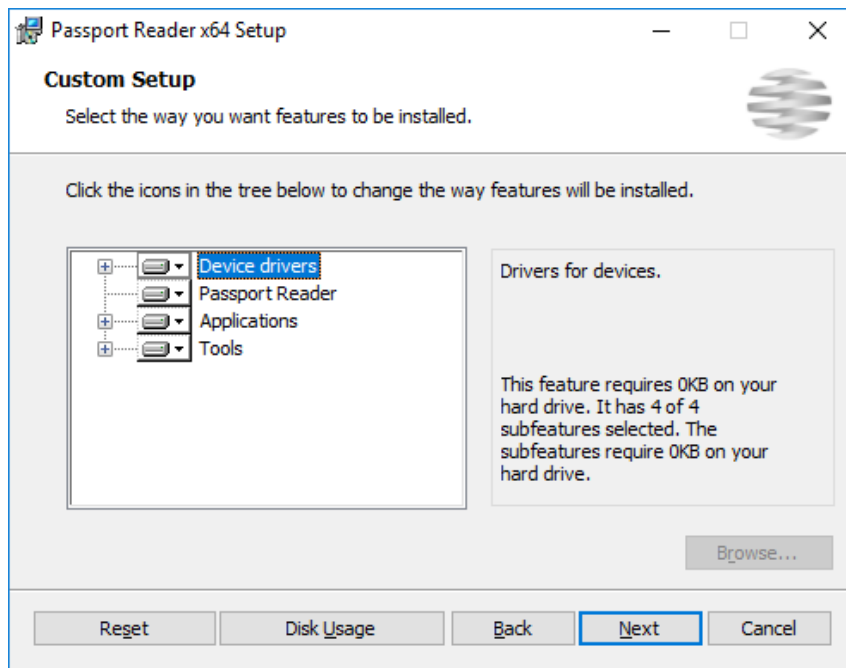
- Click **[Next]** to launch installation.



End-User License Agreement

- Accept the EULA (by ticking the checkbox above) and start the custom installation process by clicking on **[Next]**.



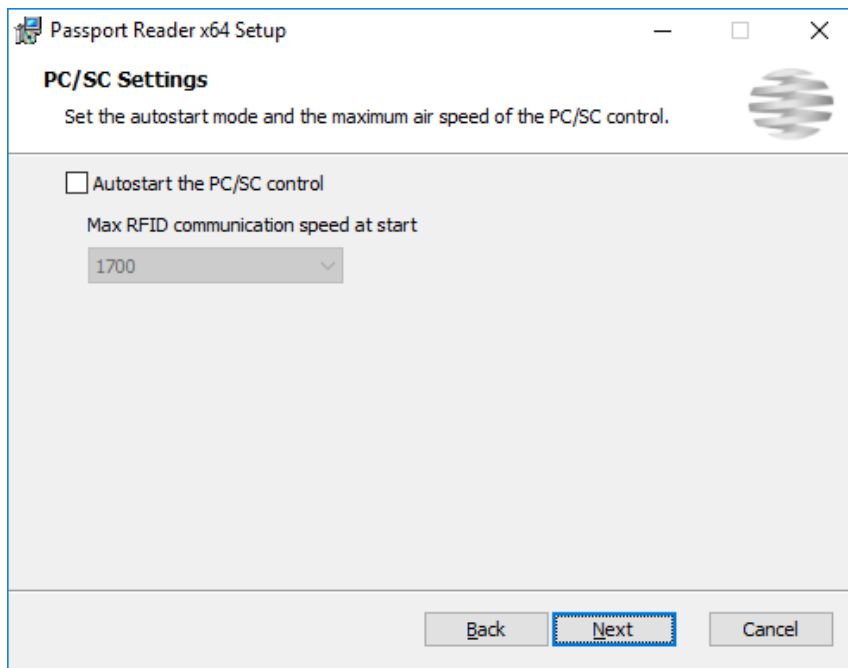


Custom Setup

- In the **Custom Setup** window, select the modules you wish to install on the PC.
- Installing the **Device Drivers** and the **Passport Reader** module are necessary for device operation, installation of all other modules is optional.

Note

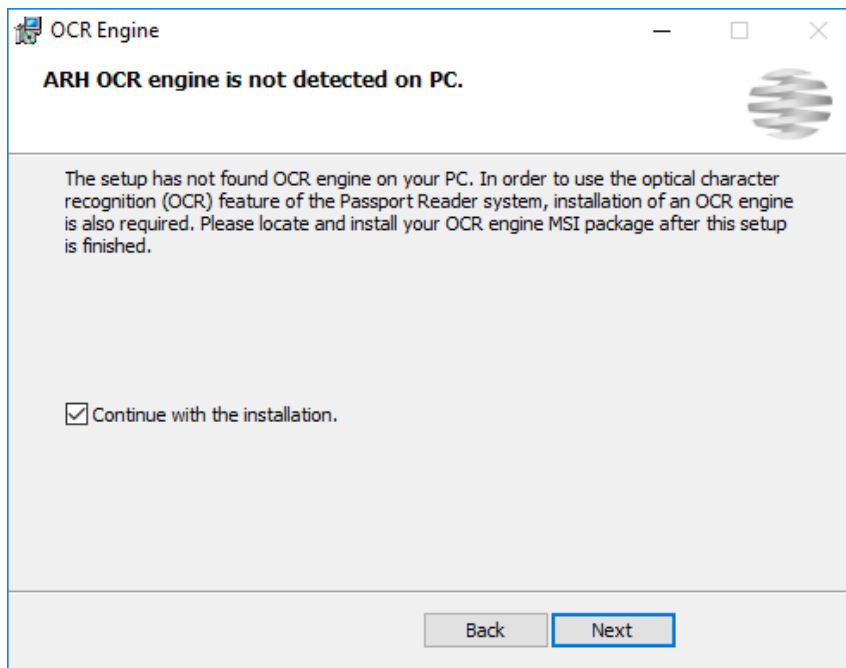
SDK and Documentation are available in the SDK folder of the PR Software package.



PCSC Settings

**! Important**

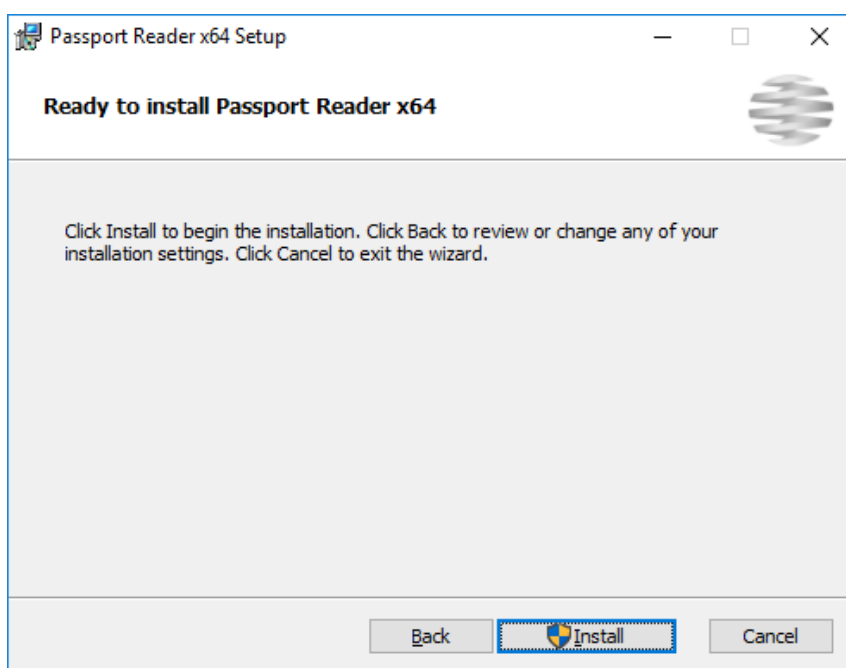
Please select the **Autostart** option only if you intend to use your document reader device via the PC/SC interface. This setting can also be modified after the installation is finished. For more information please see the [PC/SC](#) section.

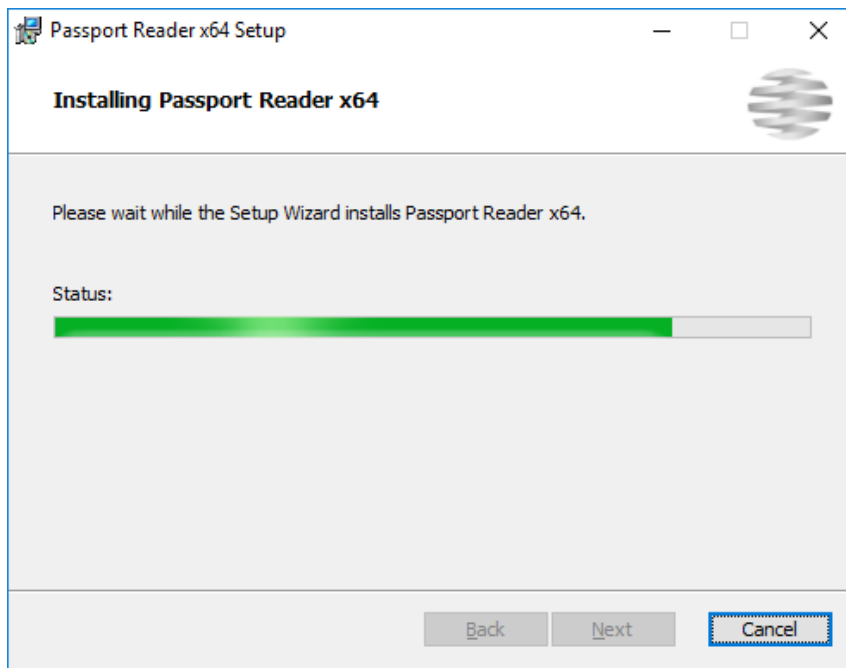


### ! Important

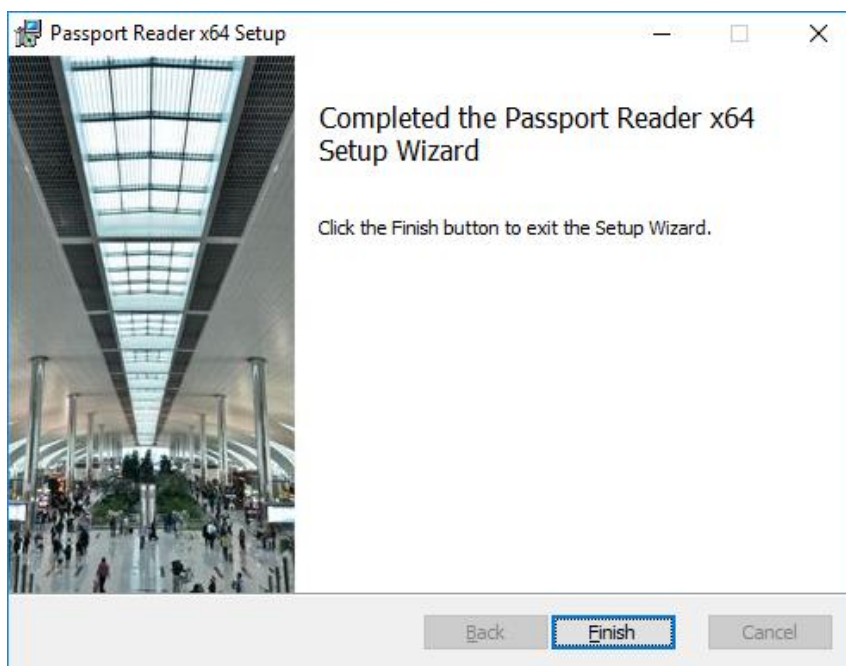
In order to use the OCR functionality of your document reader device, please also install the **procr-2.0.x.xx.msi** package located in the **win** folder of the Passport Reader install package, after current installation is finished.

- Clicking on **[Install]** will begin installation.

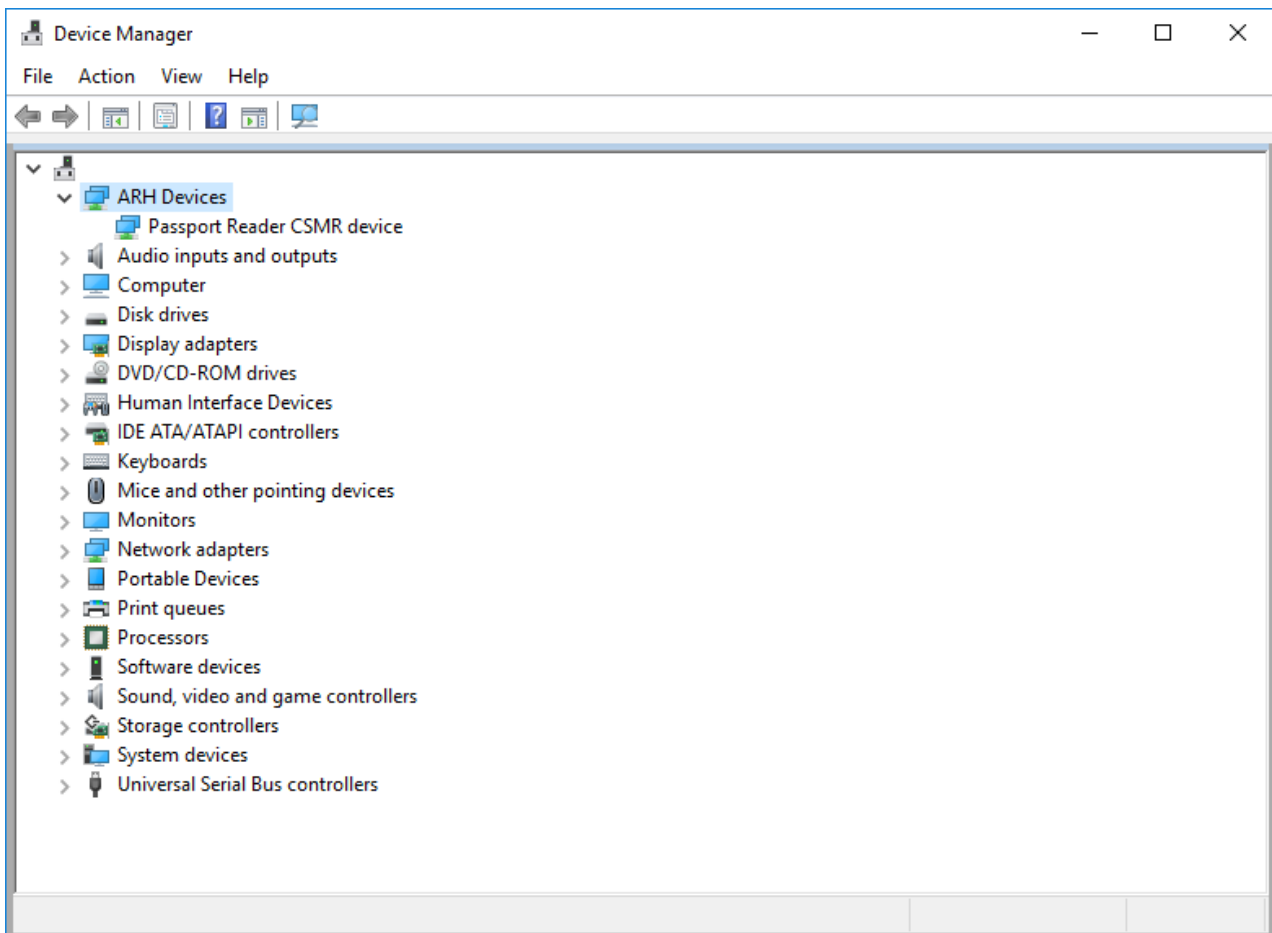




- Click **[Finish]** to complete the installation.

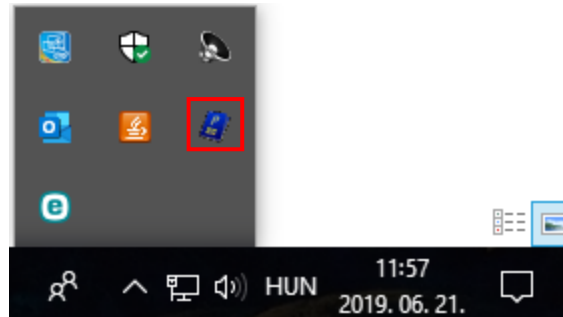


- After the installation has finished, open the Device Manager. If the installation was successful, a group named ARH Devices together with one of the following devices should be listed:
  - Passport Reader CSHR device (Combo Smart)
  - Passport Reader CSLR device (Combo Scan, Kiosk Scan)
  - Passport Reader CSMR device (Combo Smart USB, Combo Smart Kiosk, Combo Scan R)
  - Passport Reader PRMc device (PRMc models)



## 2.1. PC/SC DRIVER

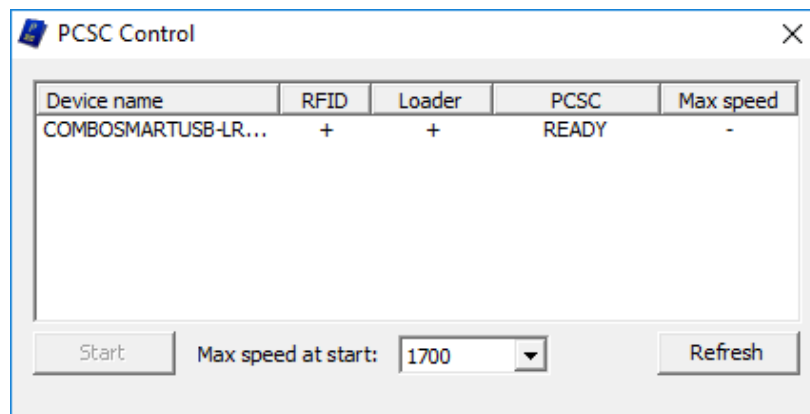
The PC/SC driver is part of the Passport Reader installer package. The icon of the PC/SC driver can be found in the toolbar.



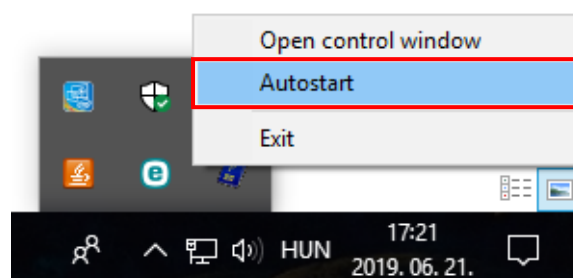
By double clicking on it, the PC/SC Control window appears. The default status is either **READY** or **STARTED** (if PC/SC **Autostart** is enabled). PC/SC interface of a document scanner device can be enabled by clicking on the device name and then on **[START]**.

### ! Important

Please make sure to close the Passport Device before starting or stopping the PC/SC interface.



The PS/SC driver can be started automatically via the **Autostart** menu: right click on the **PC/SC** icon and click on **Autostart**.



## 3. SOFTWARE INSTALLATION ON LINUX OPERATING SYSTEM

### 3.1. BEFORE YOU INSTALL THE PACKAGES

The system was built under Ubuntu 16.04 and has been tested on:

- Ubuntu 16.04 LTS
- Ubuntu 18.04 LTS

#### Note

Please read the license agreement before installing the packages.

For the installation you need "GNU Make" (we have tested with "GNU Make 3.81"), "GNU C/C++" compiler (we have tested with "GNU C/C++ 4.6.3") and the corresponding GLIBC. The kernel headers and configuration files must be installed as well.

### 3.2. CONTENTS OF THE INSTALL PACKAGE

#### Note

The Linux installation package contains both the 32-bit and the 64-bit files. Files ending **without x86 or x64** are necessary for **both** 32-bit and 64-bit installations.

#### GX

gx-7.2.x-x.tar.gz

GX system

#### Passport Reader

pr-2.1.x-x.tar.gz

Passport Reader system

prd-2.1.x-x.tar.gz

PRDDRV driver for Passport Reader devices

procr-2.x.x-x.tar.gz

OCR engine

fxmcsusb-7.x.x-x.tar.gz

USB Neural Network Controller devices

licutils-7.x.x-x.tar.gz

License manager

pr-fullpagereader-2.x.x-x.tar.gz

Full Page Reader application

pr-authenticationchecker-2.x.x-x.tar.gz

Authentication Checker application

pr-udev-2.x.x-x.tar.gz

Scripts and udev rules for automatic driver loading

### 3.3. THE INSTALLATION PROCEDURE

#### 1. Unpack and copy all files into your system:

- `use_install.sh [32|64|all]`

#### Note

Optional parameters enforce the installation of the binaries.

#### Dependencies:

Please install the following libraries with your distribution package manager or manually (these libraries are apart from services):

- SDL (A library for portable low-level access to a video framebuffer, audio output, mouse, and keyboard)
- SDL ttf (A library that enables using TrueType fonts in your SDL applications)
- SDL net
- SDL gfx (`libSDL-gfx1.2-4` if the `libSDL1.2-5` is available only then make a symbolic link in the `/usr/lib/x86_64-linux-gnu` folder with the following command `ln -s libSDL_gfx.so.15 libSDL_gfx.so.13`)
- SDL image
- FreeType (TrueType font rendering library)
- `libpcsclite1`
- `pcscd`
- Qt

GX: none

Passport Reader: GX

#### 2. Compile kernel modules:

- Download a kernel source from <https://github.com/torvalds/linux> and unpack into `/usr/src` directory.

If you have an older GX version in the kernel tree, please remove it manually by using the script `_uninstall.sh`.

You can use the kernel source package of your distribution (e.g. Ubuntu 10.04 → `linux-kernel-headers`).



- Or make sure that the kernel config files are installed.

Check the `/lib/modules/$(KERNEL_VERSION)/build` directory.

- Compile the ARH drivers:

Compile the drivers with "make" command in the following order:

- `/usr/src/gx/kernel/gxsd`
- `/usr/src/gx/kernel/prddrv`
- `/usr/src/gx/kernel/fxmc_usb`

#### Note

If you get a "No rule to make target..." error message by typing "make":

If the output of "uname -i" is "unknown" and your system is either i386 or x86\_64:

Make a symbolic link to e.g. `b_prddrv.o` by typing:

```
ln -s b_prddrv.o.i386 b_prddrv.o OR
ln -s b_prddrv.o.x86_64 b_prddrv.o
(ln -sf b_prddrv.o.i386
 /usr/src/gx/kernel/prddrv/b_prddrv.o.GenuineIntel by me)
```

according to your system.

### 3. Install new kernel modules:

For **PRDDRV**:

```
/sbin/insmod /usr/src/gx/kernel/gxsd/gxsd.ko
```

```
/sbin/insmod /usr/src/gx/kernel/prddrv/prddrv.ko
```

### 4. Automatic driver loading is enabled by the pr-udev module.

This module enables the automatic installation of the driver modules upon connecting the reader to the PC. As a result, there is no need to start the driver manually.

#### Note

If this feature is not needed, then remove the `98-arh.rules` from the `/etc/udev/rules.d` directory.

## 3.4. AFTER INSTALLATION

Once installation is complete, you can find the manual for the GX and PR systems under `/usr/share/doc/gx`. The header files can be found in `/usr/include/gx`, the library files in `/usr/lib32/gx` (and `/usr/lib64/gx` on 64-bit systems).

The basic GX library is in `/usr/lib32` and `/usr/lib64` (`libgxsd.so.7`). The file containing the property data is `/var/gx/gxsd.dat`.

After the kernel modules were started, you can check the state of the running drivers under `/proc/gx`.

Sample programs can be found in `/usr/src/gx` in the examples directory.

You can use these environment variables:

- `LD_LIBRARY_PATH`           for shared objects (\*.so)  
                                  (`/usr/lib32`, `/usr/lib64`, `/usr/lib32/gx`,  
                                  `/usr/lib64/gx`)
- `GX_VAR_PATH`               for properties (`gxsd.dat`) and global locks (`/var/gx`)
- `GX_SHARE_PATH`           for shared data (`procr-2.xx.dat`) (`/usr/share/gx`)

## 3.5. INSTALLATION OF ANOTHER ENGINE

The engine comes in a `.tar.gz` file. Type the following command to start installation:

```
tar xvfz engine.tar.gz -C /
```

## 3.6. UNINSTALLATION

If you want to uninstall the ARH files simply type:

- `rm -Rf /usr/include/gx /usr/lib32/gx /usr/lib64/gx /var/gx /usr/src/gx`  
  `rm -Rf /usr/share/gx /usr/share/doc/gx`  
  `rm -f /usr/lib32/libgx* /usr/lib64/libgx*`
- Alternatively you can also use `_uninstall.sh`.

### 3.7. DEVICE ENTRIES IN /DEV DIRECTORY

Similar entries can be found in /dev if you connect the device and load the desired driver. This entry point will be created by udev in the new 2.6.x kernel series.

```
crw-rw----1 root root    189,    2 2009-11-26 15:49 usbdev1.3
crw-rw----1 root root    252,   14 2009-11-26 15:49 usbdev1.3_ep00
crw-rw----1 root root    252,   13 2009-11-26 15:49 usbdev1.3_ep81
crw-rw----1 root root    189,    5 2009-11-26 15:49 usbdev1.6
crw-rw----1 root root    252,   17 2009-11-26 15:49 usbdev1.6_ep00
crw-rw----1 root root    252,   15 2009-11-26 15:49 usbdev1.6_ep02
crw-rw----1 root root    252,   16 2009-11-26 15:49 usbdev1.6_ep84
```

### 3.8. TROUBLESHOOTING – KNOWN BUG(S)

#### Permission denied failure

Solution:

```
/sbin/rmmod prddrv
/sbin/rmmod gxsd
/sbin/insmod /usr/src/gx/kernel/gxsd/gxsd.ko
/sbin/insmod /usr/src/gx/kernel/prddrv/prddrv.ko
```

## TROUBLESHOOTING

ISSUE	CAUSE	SOLUTION
There is a "!" next to the Passport Reader {XXX} device in the Device manager.	The driver of the controller(s) is not installed properly.	Update the drivers. If automatic refreshing fails, full uninstall the software and reinstall it.
Drivers failed to install.	The user has no administrator rights.	The drivers have to be installed with administrator rights.
TWAIN does not work on 64-bit operating system.	The lack of 64-bit Windows drivers.	Copy the twaindsm.dll located in the PR install package to your Windows directory.

## CONTACT INFORMATION

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E-mail: [rmarequest@arh.hu](mailto:rmarequest@arh.hu)

ARH Technical Support System (ATSS) is designed to provide you the fastest and most proficient assistance, so you can quickly get back to business.

Information regarding hardware, software, manuals and FAQ are easily accessible for customers who previously registered to enter the dedicated ATSS site. Besides offering assistance, the site is also designed to provide maximum protection while managing your business information and technical solutions utilized.

### New User

If this is your first online support request, please create an account by clicking on this [link](#).

### Returning User

All registered ATSS customers receive a personal access link via e-mail. If you previously received a confirmation message from ATSS, it contains the embedded link that allows you to securely enter the support site.

If you need assistance with login or registration, please contact [atsshhelp@arh.hu](mailto:atsshhelp@arh.hu) for help.